

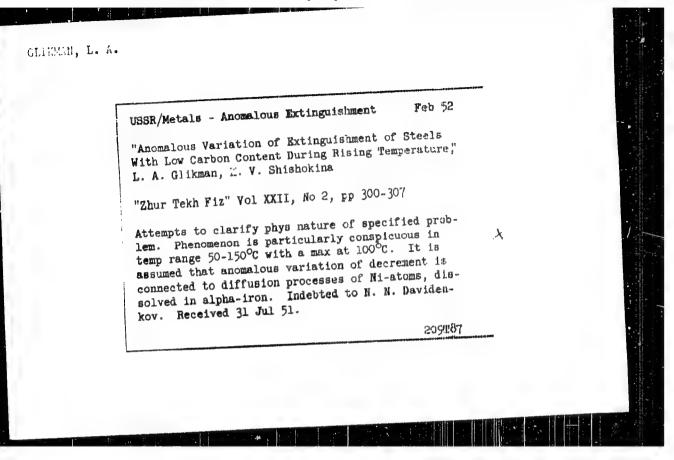
GUSEL'SHCHIKOV, M.K., professor; GLIKMAN, L.A., redaktor; Flaum, M.Ya., tekhnicheskiy redaktor.

[Effect of mechanical and thermal factors on the strength of marine boilers] Viianie mekhanicheskikh i termicheskikh vozdeistvii na prochnost' sudovykh kotlov. Moskva, Izd-vo "Moruk oi transport," 1952. 55 p. [Microfilm] (MIRA 7:10)

(Steam boilders, Marine)

"APPROVED FOR RELEASE: 09/24/2001

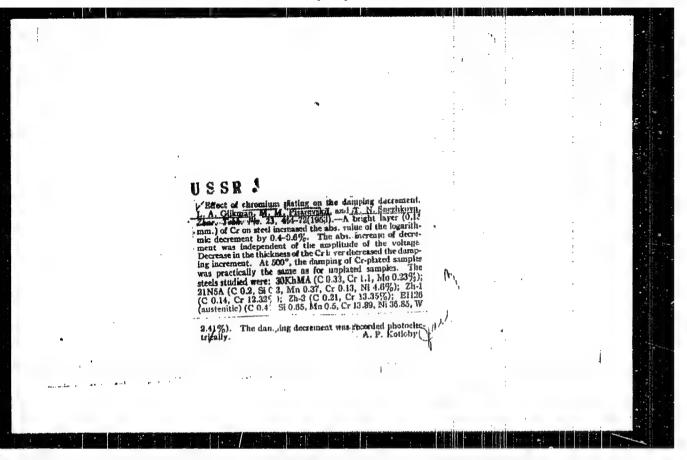
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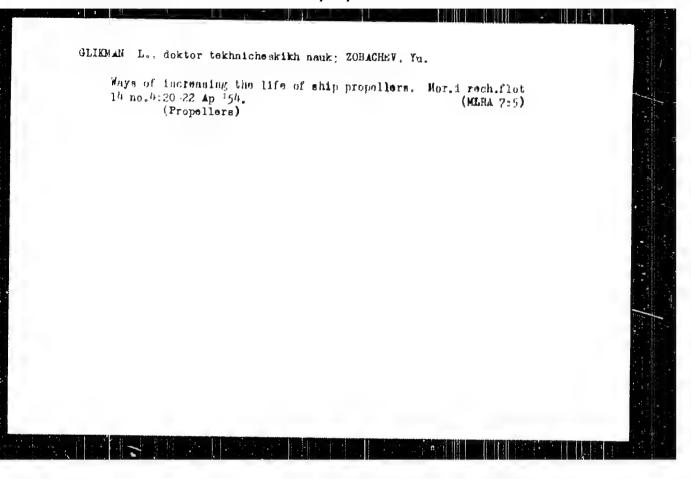


- 1. GLIKMAN, L. A., TEKHT, V. P.
- 2. SSSR (600)
- 4. Metals-Fatigue
- Physical nature of the fatigue process. Dokl. AN SSSR 86 No. 4, 1952

Carbon steel 35 and stainless steel Zh-2 were investigated by method of V. I. Iveronova and T. P. Kostetskaya (see Zhur. Tekh. Fiz. 10, 4, 1940) using radiograms due to cobalt and chromium rays, which produced interference pattern on film and showed distortion of atomic lattice at deformation. Fatigue is a process similar to that occurring at deformation and is due to "weakened" grains. Presented by Acad I. P. Bardin 5 Aug 52.

9. Monthly List of Russian Accessions, Library of Congress, Tebruary 1953, Unclassified.





FD 361

USSR/Physics - Oscillations in Metals

Card 1/1

11. Tab., 1. ..

Author : Glikman, L. A. and Kneyn, Ye. A.

Title : Effect of cold hardening and aging on attenuation of uscillations of

low-carbon steel

Periodical : Zhur. tekh. fiz. 24, 400-411, Mar 1994

Abstract : Effect of cold hardening on variation of attenuation, related to

amplitudes of stresses was investigated by stretching specimens to elongation of 2 to 12.5% and subsequent heating within 100-650° T. The obtained results confirm assumptions that attenuation is affected by two types of processes: diffusional and local plastic deformation.

Institution :

Submitted : October 14, 1953

FI: 379

USSR/.hysics - Oscillations in Metals

Card 1/1

Author : Glikman, L. A., Kheyn, Ye. A.

Title : Effect of cold working and agin; on attenuation of oscillations of

copper. II

Periodical . Zhar. tekh. fiz. 24, 560-5-5, Mar 1 154

Abstract : Studies attenuation of copper in the range of stress ampaitudes from

0.05 to 1 kg/sq mm. Effect of cold hardening by tension was investigated on round specimens at degrees of plastic elongation from 1.0 to 28% with subsequent heating in the 100-400° C range. Concludes that in general effect of cold hardening and aging on attenuation of a page

is similar to the effect of the same factors on attenuation of low-carbon steel, except charges in attenuation at stress amplitudes sieve

to zero. Diagrams.

Institution :

Submitted : October 14, 1:53

GLIKMAN, L.A., doktor tekhnicheskikh nauk; ZOBACHEV, Yu.Ye., inshener. Ways to increase the life of a ship's propeller shaft. Trudy TSNIIHF no.28:3-44 '54. (MLRA 9:1) (Shafts and shafting) (Corrosion and anticorrosives)

> CIA-RDP86-00513R000500030013-9" APPROVED FOR RELEASE: 09/24/2001

GLIMMAN, L.A., doktor tekhnicheskikh nauk; TEMHT, V.P., kandidat tekhnicheskikh nauk; ZOBACHEV, Yu.Ye., inzhener.

Problem of the physical nature of cavitation breakdowns. Trudy TSNIRF no.28:45-59 '54.

(Cavitation) (Matallography)

GLIEMAN, L.A.; BOGORAD, L.Ya.; SUPRUN, L.A.; GARMAN, E.L.; ZHUKOVA, V.I., inzh.; red.; FREGER. A., tekhn.red. [The effect of chrome plating on fatigue and corrosion resistance of steel] Vliianie khromirovaniia na ustalostnuiu i korrozionnoustalostnuiu prachnost' stali. Leningrad, 1955. 9 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.84(772)) (Chromium plating)

GLIKMAN, L.A.; DAVIDENKOV, N.N., retsenzent; SKORCHELLNTTI, V.V., kandidat
tekhnicheskikh nauk, redaktor; POL'SKATA, R.G., tekhnicheskiy redaktor

[Mechanical strength and corrosion resistance of metals] Korrozionnomekhanicheskaia prochnost' metallov. Moskva, Gos. nauchno-tekhn. tzdvo mashinostroit. lit-ry, 1955. 174 p. [Microfilm] (MLRA 8:2)

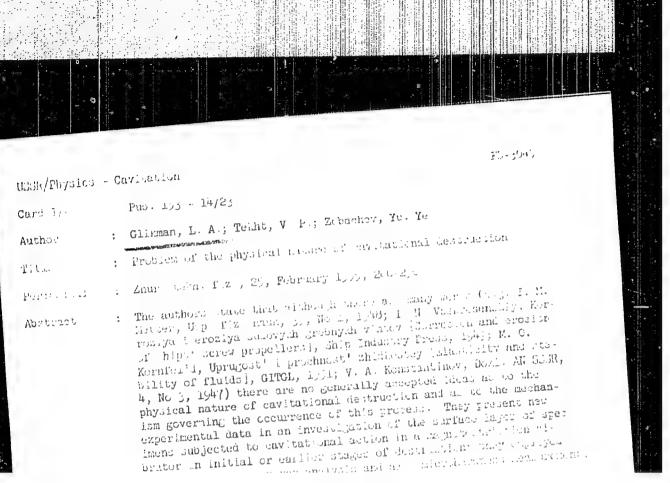
1. Deystvitel'nyy chlan AN USSR (for Davidenkov).

(Strength of materials) (Corrosion and anticorrosives)

GLIMAN, L.A., doktor tekhnicheskikh nauk, professor; SUPRUN, L.A.,

Effect of cathode polarization with protectors and external currents on an increase of fatigue strength under corrosion. Metalloved.i obr.met. no.6:10-15 D '55. (MLRA 9:3)

 TSentral'nyy nauchno-issledovatel'skiy institut morskogo flota. (Corrosion and anticorrosives) (Metals--Testing)



Card 2/2 FE-5049

Abstract : namely on variou steels, brass, and nonferrous alloys. They elaim that their results permit charpening existing concepts of

enaim that their results permit charpening existing concepts of cavitational destruction; they present photographs and detailed conclusions (e.g. establishment of plastic deformation in the surface layer etc.). Nine references: e.g. L. A. Gliman, ioid.,

7, 14, 1434, 1937.

Institution : -

Submitted : May 16, 1954

111 . 7 19 7 11 1501.

Translation from: Referatively, Zhurnal, Metal article 1997 string proceduSSF

AUTHORS: Glikman, L. A., Zobachev Yu Ye

The Effect of Cathodic Polarization: A county heef b. Means of TITLE:

an External Current and an Mg Protector served Capitalague. Stability of Carbon Steel in Tests, Be formed and Marret of the training the Problem of the Physical Natite of Cartain to

) Whyaniye katodnov poly in a isa, yneshim, tok in . magnivevym protektorom na kavitats ion ala stovkost maetados a stali pri ispytanii na magnitostrikt domocn tehi etcie i tik vopis od

o fizicheskov prirode kavitat siennogo sacru benivič

PERIODICAL: Tr. Tsentr. n ti unta morsk, flota 1250 Not pp 7

The testing of annealed carbon stee s $(\Phi_{\rm col}) = 200 \, {\rm pc.}$ ent ${\rm C}^{12}$ ABSTRACT:

was carried out in a magnetostriction vibrator, in which the specimen was caused to vibrate with an implified. If 76 that a frequency of 8000 cps, in sea water (Black Seas emposition). and also for the sake of comparison in tap water. The loss in weight was taken as the criterion of cavitation il stability. During

cathodic polarization (P) the current density has held in the hance

In addition feet some also carried between 0.6 and 4.2 mg/ m Card 1/3

151 157-17 75017

The Effect of Cathodic Polarization, Accomplished by Means of sect)

out under conditions of anodic I; graphite served as the moteria for the anode. It was established that, with increased density of the cathodic current, the rate of cathodic break down (CB) is considerably lowered, but that at maximum current densaties the weight loss in sea water is very significant and that it comprises approx. 70 percent of the weight lost in the in water during CB The large extent of CB, approaching the value for carrosion resistant materials with approximately identical mechanical properties, points to the great importance of the mechanical aspect. Results obtained also reveal the relatively high correspond losses during CB, which can also be explained by the mechanism aspect. The mechanism of this process consists in he appear ance of cyclic plastic deformation (PD) in individual microvolumes, which is a result of the mechanical action of recurrent single impacts. The PD results in a considerable electrochemical non-homogeneity, the primary condition for which is the simultaneousness of the PD process and the action of the medium. The electrochemical non-uniformity is also intensified by microscopic regions of a PD which does not occur simultaneously throughout the area subjected to cavitation. It is shown that the employment of Mg protectors restores the litigue strongth of specimene cub-

Card 2/3

- 1. Steel-Cavitation-Test results
- 3. Magnetoctriction-Applications
 Applications
- 2. Polarization-Applications
- b. Vibrating mechanisms-

1. 12-14-2 11 92

The Effect of Cathodic Polarization, Accomplished by Means of (cent.)

subjected to simultaneous corrosive action of s. It water to 90 percent of its value in air. The fact that Mg protectors have meffect upon CB is an indication that electrochemical note homogeneity is considerably greater in CB than it is in a far gue process. At greater current densities the anodic P process resulted in a significant acceleration of the CB owing to the anodic dissolution of specimens being tested.

Card 3/3

1. 10-7-7

Translation from: Referativnvy zhatnal, Metallurgaya, 1947 Mr.L., p. 35 (USSR)

· AUTHORS: Glikman I A., Babayev A N

, -1, in

TITLE: Effective Application of the Zak: Method & Determining Res do.

Stresses in Solid and Heliow Cylinder - (Retenoral news) primenentye sposoba Zake, pri opredetence o telebryen

napryazheniy v sploshnykh i polykh is lindi (*)

PERIODICAL: Tr. Tsentr n i in tymorsk flet, 1956 Gree pp 17 4

ABSTRACT: The application of a modified Zaks method is described a st

the residual stresses (RS) in a cylinder idiscibly means of siccessive boring and furning. Two described treather the results of comparison of magnitudes of deformation, measured by means of an optical gage and wire strain gages (SG). The precedure presented for the calculation of the RS, in the case of the luccessive employment of boring and turning operation, does not introduce any significant additional compilications. It compared with

the usual RS computations according to the Zides method. It is shown theoretically that preliminary borning testals in the termonic

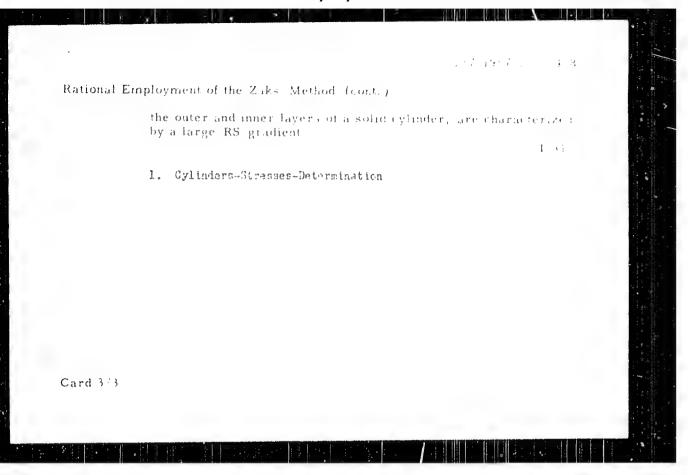
Card 1/3 in the remaining part of the cyclider of axial RS that are constant

7 1457 : MA

Rational Employment of the Zaks Method (cont.)

over the cross section and varying tangers distance radial otherse-Experimental work was performed on discs (D) (05 min) in de au eter and 15 mm thick, made of grade 3 steel taken from eviand cal blanks 600 min long and 110 min in diameter. RS were induced in the blanks by heating them to a temperature of \$100. and keeping them at that temperature for five hours; this was followed by quenching in water in a vertical position (8.1) and cut from the center portion of the blank and for purposes of comparison, several of them were investigated by the usual 7 is method by determining deformation from a measurement of the outer diameter by means of a horizontal opin digine. It is thereexperimentally that SG's are as accurate a, the optical game and that they simplify considerably the process of measuring determ ations and determining RS in large cylinders. It is pointed at that the Zaks method for the determination of Lomp'e'e RS curve may be employed expeditiously on a single D by successively removing layers of material tirst by buring and then by tarmer In that instance, a complete RS curve is objected by inderpositing the stresses in the internal zone. Applied in a difference, he d Zaks method should be particularly considered in table case the RS curves in the outer layer of a cylinder (disc) for p. both

Card 2/3



Celan marker to de

137-58-1-1316

Translation from Referativnyy zhurnal, Metallurgiya, 1958, Nr I, p 176 (USSR)

AUTHORS' Glikman, L.A., Suprun, L.A.

TITLE: On the Development and Mechanism of Corrosion Fatigue Damage

IK voprosu o razvitii i mekhanizme korrozionnoustalostnogo

razrusheniya)

PERIODICAL: Tr. Tsentr. n.-i. in-ta morsk. flota, 1956, Nr 5, pp 25-31

ABSTRACT:

The problem of the laws of initiation and development of cracks (C) in fatigue failure (FF) of steel subjected to corrosion testing simultaneous with cyclic testing over definite periods of time was investigated at various stress amplitudes. Specimens of Nr 35 carbon steel, previously heat treated by normalization from 850° and subsequent high-temperature tempering at 650°C, were tested. The corrosion medium was fresh water and 3% NaCl solution. It was found that under conditions of corrosion fatigue damage the duration of cyclic testing to the time of appearance of visible C was considerably less than in the FF of steel under ordinary atmospheric conditions. With a 3% NaCl solution, the incubation period for the initiation of C was about 10% of the total number of cycles required for failure, while

Card 1/2

137-58-1-1316

On the Development and Mechanism of Corrosion Faligue Damage

with fresh water it was about 40% and in atmospher an about 70-90% of the total time required for FF. This distinctive characteristic of the development of fatigue C is explained by the large number of C in the zone of identical stresses normally observed in addition to the fracture in cases of corrosion FF. The speed of spreading of C once started into the depth of the material increases with an increase in stress amplitude, and with an increase in the total number of cycles, and also with increase in the corrosiveness of the medium. It is shown that preliminary "exercising" of the specimens in air by cyclic testing for 10 million cycles at a level approaching the $\sigma_{\rm w}$ (stress amplitude 27 kg/mm²) increases their corrosion fatigue strength by approximately 30%. This confirms the hypothesis that a developing electrochemical inhomogeneity in the preliminary cyclic testing has a considerably smaller effect on the course of the process of corrosion than does the effect of electrochemical inhomogeneity developing when corrosion is present at the same time.

L. U.

1. Steel-Fatigus 2. Steel - Corresion 3. Steel - Test methods

4. Steel -Test results

Card 2/2

"APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000500030013-9

137-58-1-1317

Translation from Referativnyy zhurnal, Metalourgiya 1958 Nr l p 176 (USSR)

AUTHORS: Glikman, L.A., Suprun, L.A.

TITLE.

A LIVE MANNE

The Effect of Surface Hardening by Shot Blasting on the Corrosion Fatigue Strength of Steel (Vlivaniye poverkhnostnogo uprochneniya drobestruvnoy obrabotkov na korrozionnoustalostnuvu prochnost' stal.)

PERIODICAL Tr. Tsentwa na i inata morsk flota, 1956, Nr 5, pp 32-35

ABSTRACT:

Card 1/2

An investigation was made into the effect of shot blasting on tatigue strength (FS) and corrosion fatigue strength (CFS) of specimens of Nr 35 steel that had undergone prior heat treatment. It was found that shot blasting conducted by any of the procedures in current practice, fully approved for standard fatigue testing retains a favorable influence for corrosion strength in a 3% NaCl solution only over a limited range of cycles (about 2x106 cycles). Good protective properties have been demonstrated by a combined protection afforded by shot blasting and by Mg cladding, the CFS proved to be 7% higher than even the FS under atmospheric conditions. From this it follows that to increase the FS of steel products operating under

137-58-1-1317

The Effect of Surface Hardening (cont.)

the simultaneous effects of variable stresses and corrosion, surface hardering must be applied only in combination with other methods of protection (coatings, or cladding or cathodic protection).

L.U.

- 1, Steel-Heat treatment 2, Steel-Corrosion 3, Steel-Fatigue
- 4. Steel--Hardening--Effects

Card 2/2

137-58-1-1395

Translation from Referativnyy zhurnal Meta Jurgiya 1958, Nr I, p 186 (USSR)

Glikman, L. A., Subrun, L. A., Bogorad, L. Ya., Gakman, E. L. AUTHORS:

Effect of Chromium Plating on the Fatigue and Corrosion TITLE:

Fatigue Strengths of Steel (Vhyamiye khromirovareya na usta-

lostnuyu i korrozionnoustalostnuyu prochnosti stabil

PERIODICAL: Tr. Tsentr. n -1 in-ta morsk. flota, 1756, Nr 5, pp 36-42

The results of an investigation of the effects of the chromium plating procedure employed upon the fatigue strength (FS) and ABSTRACT:

the fatigue corrosion strength (FCS of specimens of Nr 35 carbon steel subjected to heat treatment are presented. When tested for FCS the midsection of the specimer was in a flowing liquid medium (3% NaC1). Seven chromium platings differing as to plating procedure and the condition of the Cr coating, were tested. The chromium plating 'C of all the specimens was performed in a bath with an electrolyte of identical composition (in g/f): CrO3 150 H2SO4 1 5 It was found that C differs in its effect upon FS when tested in air, depending on the plating procedure For specimens coated with bright and cloudy Cr.

significant diminution in the FS of the parent metals was found Card 1/2

137-55-1-1395

Effect of Chromium Plating on the (cont '

which is explained by the presence in the coating of residual tensile stresses. and the positive effect of tempering at 550-600°C was confirmed, as it restored the FS almost completely. In porous chromium plating, no reduction in FS was revealed, and this is explained by the significantly diminished magnitude (due to general development of a network of cracks) of residual tensile stresses in such coating. Corrosion fatigue tests showed that C provides unsatisfactory protection against reduced FS of steel under conditions of corrosion. Tempering after C has virtually no effect on the ECS of steel all tests revealed a comparatively small difference between the curves for corroaton fatigue of C and of non-chromium-plated specimens. A strict relationship between the corrosion strength and the number of cycles was found to exist in both categories. The use of a supplementary 2-layer Ni and Cu coating beneath the Cr does not improve the protective properties of the coating. A significant improvement in the protection against reduction in FS against corrosion of specimens covered by bright Cr was attained only with a preliminary two-hour heating of the chromium-plated specimens in flaxseed oil at 140-150°. In the opinion of the authors, the unfavorable effect of Cr coatings upon the FCS of steel is explained by the appearance of cracks in the coating under cyclic loads, these cracks serving as channels leading the corrosive medium to the parent metal. L U Card 2/2

1. Stock-Ogting - 2 - Sicolo-Borrorian - 3. Garrian platings Affects

"APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000500030013-9

SOV 124-58-3-3518

Translation from: Referationyy zharnal, Mekhanika, 1958, Nr 3, p130 (USSR)

Glikman, L. A AUTHOR:

Stability of Residual Stresses and Their Effect on Mechanical TITLE:

Properties of Metal and Strength of Components (Ustoychivost ostatochnykh napryazhenty wkh viyaniye na mekhanichaskiye svoystva metalia i prochnosti "zdeliy)

PERIODICAL: Tr Leringr. snzh. ekor. meta. 1956, Nº 13, pp 145-203

After analyzing experimental in estigations (performed by Glikman as well as by other authors) the results of which are ABSTRACT:

recorded in technical literature the author presents the following conclusions: 1) Stability (preservation) of residual stresses in steels is very great (the reduction amounts to 6-8%) even after prolonged periods at room temperature; at temperatures of 300°C and higher the residual stresses 2) Under static loading the residual diminish considerably stresses are preserved until the summary stresses (residual stresses plus stresses due to external loads) exceed the

elastic limit; the residual stresses are relieved when residual deformations equivalent to 0.5 1% appear. 3) Under cyclic Card 1/2

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SOV 124-58-3-3518

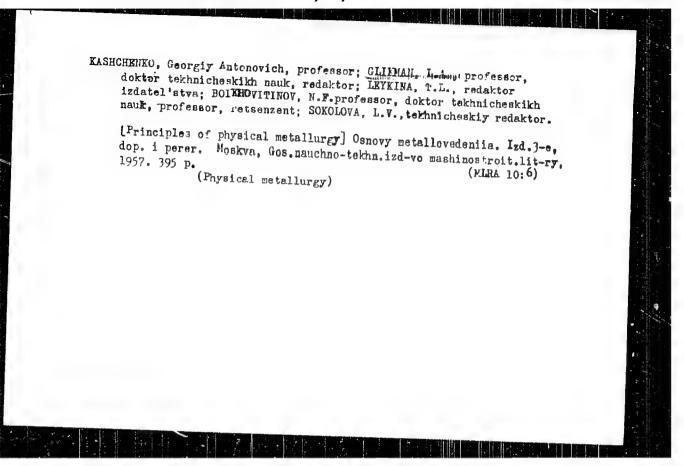
Stability of Residual Stresses (cont)

loading, the residual stresses diminish noticeably when the summary stresses exceed the cyclic elastic limit. Reduction of residual stresses by the action of cyclic loads is not recommended. 4) Strength of plastic materials is not affected by residual stresses; this holds true for materials in uniform as well as nonuniform states of stress. In the case of a uniformly stressed material residual stresses bring about a reduction of the limits of proportionality, elasticity, and yielding. 5) In the case of brittle materials and plastic materials with tendencies toward brittle fracture (under conditions of reduced tentperature, increased loading rates inotching) residual stresses always reduce the strength of uniformly stressed materials and depending on their distribution, either lower or increase the strength of materials which have been stressed nonuniformly. b) Residual stresses of linear or planar nature do not affect the susceptibility of metals to brittle fracture; residual stresses of three dimensional character however may cause the metal to become brittle 7) Residual compressive stresses in the surface layer increase fatigue resistance of materials during bender - whereas residual tensile stresses impair this property (by reducing the cycle amplitude at the fatigue limit). Bibliography: 8b references

A D Kovalenko

Card 2 3





JLIMIAI, L. A. Glikman, L.A., Doctor of Technical Sciences, Stanyukovich, AUTHOR: A.V., Candidate of Technical Sciences and Chizhik, A.I., Heat-resistant Materials for Power Machinery Building. (Zharo-TITLE: prochnyye materiyaly dlya energomashinostroyeniya) PERIODICAL: Energomashinostroyeniye, 1957, Vol.3, No.11, pp. 22 - 26 ABSTRACT: The article commences with a statement of the importance of studying mechanical properties of metals at high temperatures and with a review of early work on this subject in the USSR. After the war, work developed extensively on the study of the properties of heat-resistant materials. New laboratories for this purpose were set up in the Central Scientific Research Institute of Engineering Technology (TsNIITMASh), the Central Scientific Research Institute for Ferrous Metallurgy (TSNIIChERMET) at the Neva Works imeni Lenin (NZL), the Kharkov Turbine Works (KhTZ) and elsewhere and the laboratories at the Central Boiler Turbine Institute (TskTI) and the Leningrad Metal Works (LMZ) were extended. In the solution of metallurgical problems involved in the manufacture of new heat-resistant mterials, a leading part has been played by such enterprises as "Elektrostal", Card 1/7 the Ural Engineering Works (Uralmashzavod), the Neva Works

Heat-resistant Materials for Power Machinery Building. 114-11-5/10

imeni Lenin, the New Kramatorsk Engineering Works (HKMZ) and

A detailed study was made of the kinetics of failure over a long time and of the kinetics of structural changes in the properties of materials exposed to high temperatures for a long time. As a result of this work it was possible to draw up a number of analytical relationships. An example is given of such a relationship between the long-term ultimate strength of heatresistant steel and the temperature. This formula includes a coefficient which varies greatly from one steel to another and appropriate values may be taken from the graph given in Fig. 1. The accumulation of test data on long term failure made it possible to develop the general view of the changes that take place in plastic properties at high temperatures as a function of the mean rate of creep and time to failure. It was shown that the development of inter-crystalline failure with a reduction in the rate of creep or with increase in the test time leads to the appearance of a range of rates of creep in which there is a marked reduction in the plasticity and increase in the brittleness. Changes in the plastic properties of a number of steels as a function of the mean rate of creep are shown in Fig. 2. Work on heat-resistance carried out in the Central Boiler

Card 2/7

Heat-resistant Materials for Power Machinery Building. 114-11-5/10

Turbine Institute and at Leningrad University resulted in the derivation of a relationship between the quantity of metal reacting with oxygen and the time. A great deal of work was done on the ageing of high alloy steel by study of the structure and properties of a group of steels after lengthy exposure to high temperature. It was shown that, for a number of materials, identical structures can be obtained at different ageing temperatures by altering the tent time. For many materials, the structural condition can be related to the impact strength. This is very useful in maintenance work. Procedures have been developed for studying the fatigue strength at high temperatures.

Recently, more attention has been paid to physical methods of investigation, such as determination of thermal conductivity and

Experimental results on creep in pipes under pressure have been compared with results of the usual tension tests and a method has been developed for calculating the equivalent stress in pipes under pressure from the results of tests on ordinary specimens that is applicable to all boiler steels (see Fig. 5). The development of the first boilers and turbines for superhigh steam conditions provided a great stimulus to the investi-Card 3/7 getion of heat-resistant materials. Examples of heat-resistant

Heat-resistant Materials for Power Machinery Building.

114-11-5/10

materials which have been developed and investigated in detail and which have found wide application in power engineering are listed in a table. The table lists 16 brands of steel and for each gives the heat treatment, the test amperature, the mechanical properties, the creep limit and the long-term ultimate strength.

In the article special mention is made of certain steels. Steel P-2 is widely used for forged rotors. Another heatresistant rotor material is chrome-tungsten-molyodenum steel 34-415 which has high structural stability.

An important pearlitic steel for casting is brand 20XMQ7 which is used at operating temperatures of up to 540°C. Use is now beginning to be made of a new cast-chrome-molybdenum-vanadium temperatures up to 570°C. A series of new pearlitic steels has been developed for super-heater tubes and steam pipes. Steel an example and so are steels M-531 and M-454. A major task at favourable technological properties. Work is being carried out results have been obtained with materials based on stainless 12% Card 4/7 chromium steel which also contains such elements as molybdenum,

Heat-resistant Materials for Power Machinery Building. 114-11-5/10

tungsten, vanadium and niobium to a total content of 1-5%. steels are used after heat treatment. Steels of this kind are 15X11MO, 15X12BMO and 1X12B2MO Variants of cast-chromium heatresistant steels are of considerable interest; materials of these kinds are steels Xlln6 and XllnA.

Since the war, investigational work and developments in metallurgical work on casting and forging have led to the development of a series of heat-resisting austenitic steels. One of the first of these which has been studied in the most detail is steel 3N-405 which has satisfactory technological properties and sufficiently high heat-resistance to combine with good structural stability. It has been used for the manufacture of blades and a number of other parts of turbines for super-high steam conditions and for gas turbines. During development work on the welded rotor for a gas turbine several large parts were made from this steel using different manufacturing procedures. The parts were subsequently tested at the Leningrad Metal Works and the Central Boiler Turbine Institute and it was found necessary to improve the quality of ingots and the technology of hot working. A good deal of work was done on the welding of this steel.

Steel 34-572 has been manufactured and rolled by the "Elektro-Card5/7stal" Works and investigated in detail by the Central Boiler

Heat-resistant Materials for Power Machinery Building. 114-11-5/10

Turbine Institute. It has a high mlaxation stability and low sensitivity to the presence of cuts so that it is very suitable for the manufacture of stude and bolts intended to operate at temperatures of up to 580 °C, and also for large forgings for

Steel 94-612, a chrome-nickel austenitic steel alloyed with tungsten and titanium, has been developed. It has good mechanical properties in the temperature range 20 - 650 C. The impact strength is maintained at a high value after prolonged againg at 650 - 700 °C.

A great deal of work has been done on the development and

use of cast austenitic steel. One such steel is brand AAl which has high heat-resistance and stability so that it can be used at working temperatures of up to 650 °C. Considerable difficulties had to be overcome in the manufacture of castings of heat-resistant austenitic steels because of their tendency to form films, which leads to the formation of wrious defects on the surface of the ingots. These defects are found in all existing austenitic heat-resistant steels. Reliable welds can be made of these steels only in regions from which such defects and porosity are completely absent. A good deal of work has been Card 6/7done on cast austenitic steel x25H13T-1 which has been used for

Heat-resistant Materials for Dame -

114-11. 6214

AUTHORS: Glikman, L.A., Dr. of Technical Sciences, Prof. and

Zobachev, Yu. Ye., Candidate of Technical Sciences.

(Central Marine Research Institute).

TITLE: Influence of shot peening on the cavitation resistance

of metals tested by means of a magneto-striction vibrator. (Vliyaniye drobestruynogo naklepa na kavitatsionnuyu stoykost' metallov pri ispytanni na

magnitostriktsionnom vibratore).

PERIODICAL: "Metallovedenie i Obrabotka Metallov" (Metallurgy and

Metal Treatment), 1957, No.5, pp.38-41.(U.S.S.R.)

Grossman (2) found that shot peening has a favourable ABSTRACT: influence on cavitation resistance but his results were

described of experiments simed at studying the influence of shot peening on the cavitation resistance of carbon steels containing 0.4 and 0.53% C, on brass and on an

austenitic steel. Specimens were made of these materials which were subjected to cavitation tests on a magnetostriction vibrator after shot peening. The depth of the work hardened layer was 0.2 to 0.25 mm for the austenitic steel and 0.1 to 0.15 mm for the brass. The authors did not detect any appreciable influence of

shot peening on the cavitation strength. The shot peened surface layer increases somewhat the resistance of the metal to plastic deformation but this increase

Card 1/2

Influence of shot peening on the cavitation resistance of metals tested by means of a magnetostriction vibrator. (Cont.)

is not large enough to reduce appreciably local plastic deformation caused by the mechanical effect of the hydraulic impacts during the collapse of bubbles. The relatively slight increase in the strength of the surface layer does not compensate the adverse influence caused by the decrease in the corrosion stability of the metal. 4 Tables; 5 Russian, 1 American references.

Card 2/2

AJTHOR: Glikman, L.A., Doctor of Technical Sciences, Professor, and Babeyev, A.N., Candidate of Technical Sciences.

TITLE: Cases of fatigue fractures of marine shifts. (Ustalostnaya prochnost'obraztsov, naplavlennykh avtomaticheskoy svarkoy pod flyusom)

PERIODICAL: "Metallovedeniye i Obrabotka Metallov" (Metallurgy and Metal Preatment), 1957, No.10, pp.37-45 (U.S.S.R.)

ABSTRACT: There were cases of fatigue fractures of marine shafts which, after wear and corrosion, were dimensionally restored by welding. Therefore, the authors decided to determine the fatigue strength of specimens with deposits produced by autmatic welding under flux. Marlier, one of the authors (3) studied the technology and the method of selection of welding regimes, aimed at obtaining the necessary mechanical properties and absence of cracks in the thermally influenced zone and in the weld zone. Furthermore, the influence was studied of the temperature of preliminary heating and also of the geometry of the weld deposit on the magnitude and distribution of the residual stress. The experiments were made with specimens of 60 mm dia. since preliminary tests showed that this diameter permitted welding along the generatrix, along a spiral at an angle of 45 and along a ring. The specimens were made of steel 40, the compo-

Cases of fatigue fractures of marine shafts. 129-10-9/12 sition of which was as follows: 0.4% C, 0.26% Si, 0.57% Mn, 0.033 S and 0.0225, P; the mechanical properties after annea-ling at 840 C were $\sigma_s = 28 \text{ kg/mm}^2$, $\sigma_b = 58 \text{ kg/mm}^2$, $\delta_5 = 25\%$ and $\psi = 45\%$. The welding was effected with direct current of reverse polarity. The graph, Fig. 2, shows the results of fatigue tests of specimens in the original state, after restoration by welding along the generatrix, after restoration by welding along the spiral at 45, after restoration by welding along the ring and also after restoration by welding followed by work-hardening by means of rolls and restoration by welding by means of rolls and restoration by welding by means of rolls and restoration by means of rolls and restoration by means of rolls are followed by tempering for two hours at 650 C. The by welding followed by tempering for two hours at 630 C. The various machanical properties, after different regimes of restoration and treatment, are plotted in the graphs, Figs. 3 to 6. It was found that the fatigue limit of specimens with weld deposits amounted to only about 36% of the fatigue limit of the metal in the original state and was independent of the angle between the direction of feeding the weld deposit and the specimen axis. Tempering for 2 hours at 630 C improves the fatigue limit of the specimens with weld deposits to 10 kg/mm whilst for specimens which were work-hardened by rolls with a pressure of 600 kg the fatigue limit increased to 14 kg/mm2 these values represent 44% and 64% respectively of the fatigue

Card 2/3

Jaces of fatigue fr charge of a rine shafts. (John).

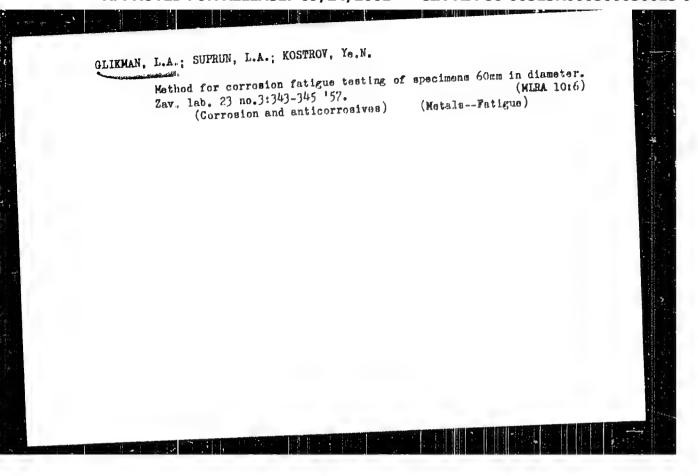
limit of the metal is any original state, the most likely cause of the low fatigue limit of the specimens with weld cause of the low fatigue limit of the specimens with weld elects consists of the simultaneous action of residual tendeposits consists of the simultaneous action of residual tendeposits consists of the simultaneous action of residual tendeposits and welding defects which play the rôle of stress sile stresses and welding defects are, in the given case, of fundacental amportance.

There are 6 figures, 2 tables and 10 references, 9 of which are Sharie.

ASSOURTION: Central Marine Scientific Research Institute (FallI) and Leningrad Saip-tuilding Institute (Leningradskiy Korablestroitelmyy Institut)

AVAILABLE: Library of Congress

Card 3/3



"APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000500030013-9

LIA MAN.

.1

Kolgatin, N.H., Glikman, L.A., Tecdorovick, V.F.

32-9-21/43

AUTHOR: TITLE:

A Method for Long-Duration Tension Tests of Tute-Shaped Samples With Internal Hydrogen Pressures at High Temperatures (Ketodika dlitel'nykh ispytaniy na razryv trubchatykh obraztsov pod vnutrennim davleniyem vedoroda pri vysekikh temperaturakh)

PERIODICAL:

Zavodskaya Laboratoriya, 1957, Vol. 23, Nr 9, pp 1098-1101 (USSR)

ABSTRACT:

A special plant and a special method of investigation, by which internal hydrogen pressures and the influence exercised by them on the refractoriness of the tubes (or, to be more accurate, upon their fatigue limit) are developed. There follows a description of the plants and of the experimental method. The sample is heated in an electric furnace up to the given temperature for 4-5 hours with a subsequent pause of 1 hour. Next, hydrogen is introduced through a valve until in the sample any pressure corresponding to the amount of tension in the walls of the sample is attained. The amount of this tension is computed according to a formula. In order to ascertain the influence exercised by hydrogen upon the fatisme limit analogous investigations were carried out in nitrogen. It is shown that hydrogen exercises a considerable influence upon the reduction of the fatigue limit of steel "26" at 400, 450 and 500°. At all test temperatures and different times needed for the tearing of

Card 1/2

32-9-21/43

A Method for Long-Duration Tension Tests of Tube-Shaped Samples With Internal Hydrogen Pressures at High Temperatures

the samples of steel "20" in hydrogen, the character of destriction was observed to be brittle. An investigation of the same type of steel in nitrogen during a relatively short duration of tearing showed that the destruction of the tubes was accompanied by considerable plastic deformation. It was found that the destruction of steel "20" with internal hydrogen pressure always takes place at the granular bound lies. The plant described permits a simultaneous investigation of a relatively large number of samples of tubes. There are 7 figures and 7 references, 3 of which are Slavic.

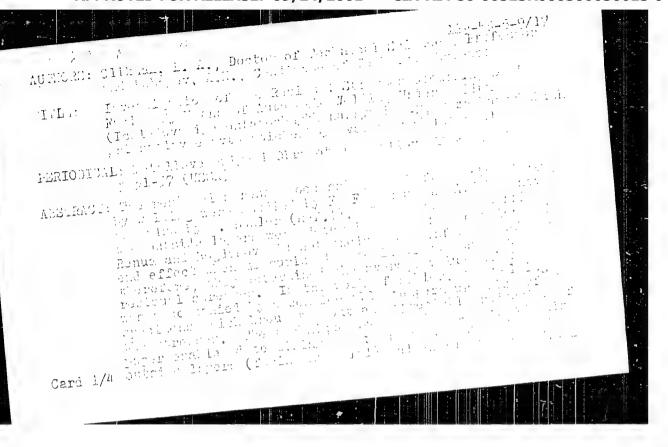
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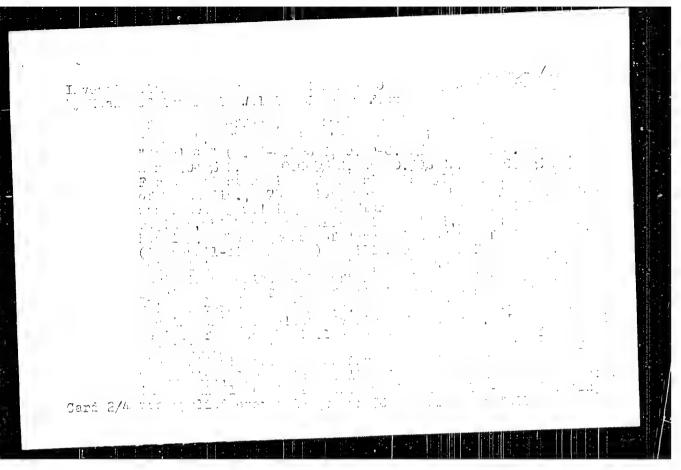
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pererabotke nefti i rolucheniyu iskusstvennogo zhidkogo topliva)

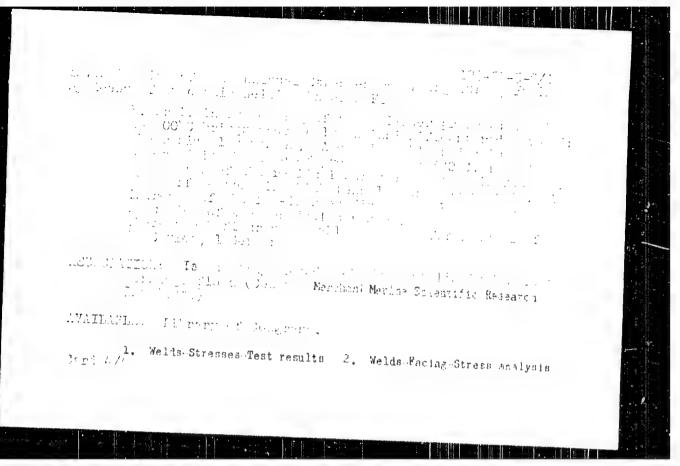
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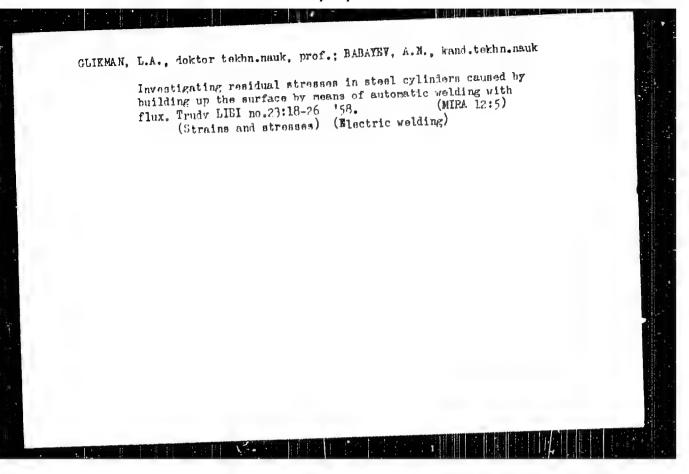
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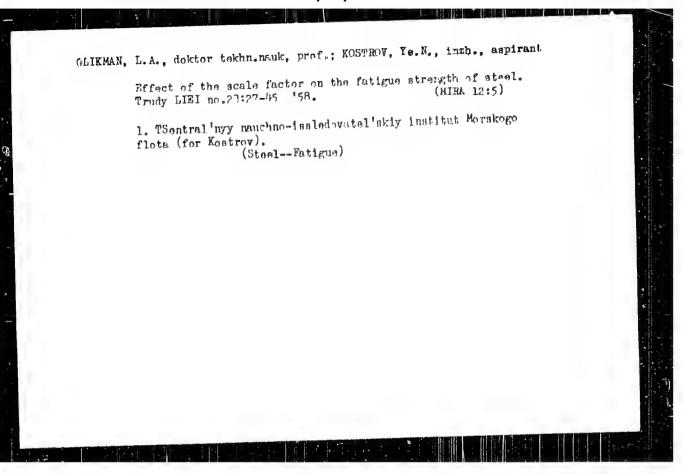


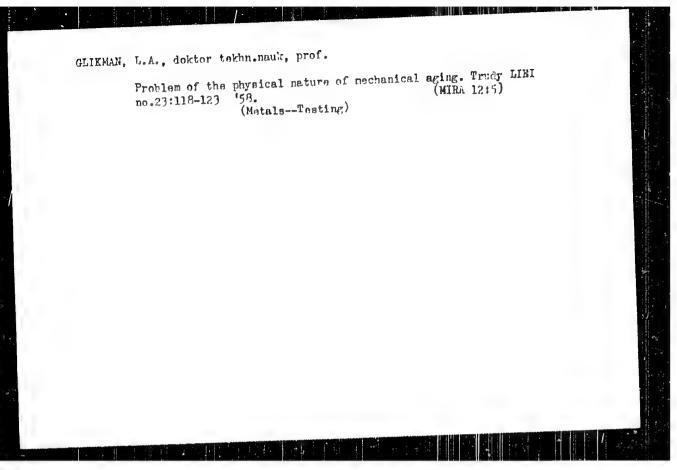












CLIKMAN, L.A.; KOSTROV, Ye.N.; SUPRUN, L.A.; YELIN, I.A.; SHCHERRAKOV, P.S.;

ZORACHEV, Yu.Ye.; DORRER, V.K.; STRUMPE, P.I., kand. tekhn.nauk, otv.

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tekhn.red.

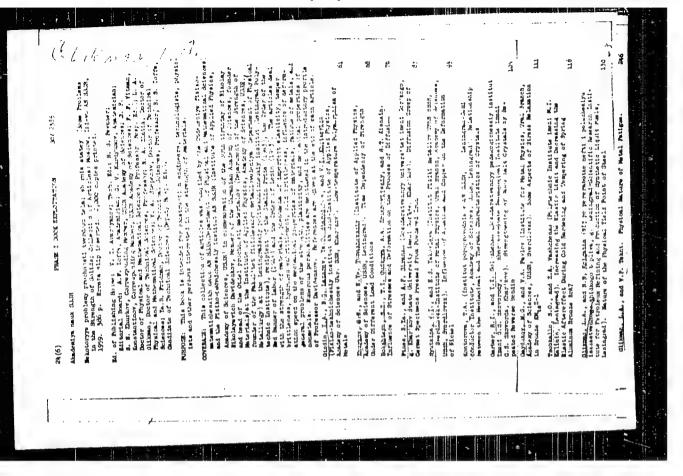
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metallov. Leningrad, 1zd-vo Morskoi transport 1859. 76 p.

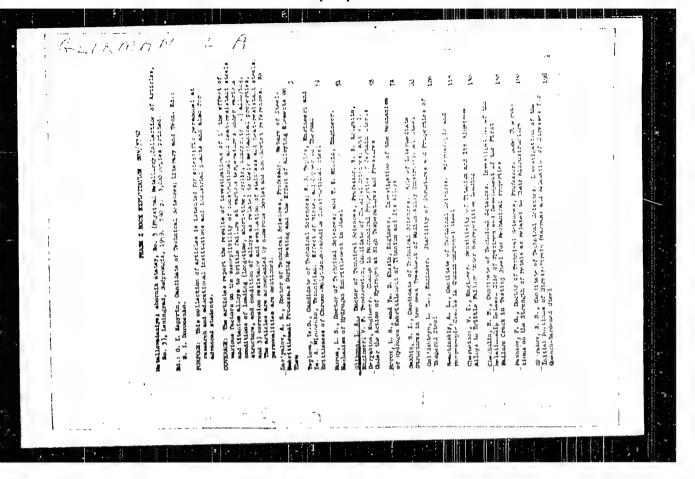
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(Leningrad. tsentral'nyi nauchno-iseledovatel'skii institut
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morskogo flota. Trudy no.22)

(Metals--Testing) (Corrosion and anticorrosives)

"APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000500030013-9





307/129-59-5-5/16

AUTHORS

Kolgatin N.H. Engineer, Glikman, L.A. Doctor of Te hnital Scienzes Professor, Teodorevich, V.P.,

Canindate of Chemical Sciences and Denyabina V.I.

Englines:

Su tained Strength of Steels During Investigation of TIME

Titurar Spe imens Subjected to an Invernal Pressure of Hydrogen at Elevated Temperatures (Dlitel naya prochnost sta sy pri ispytanii trubchatykh corazisov pod vnutrennim

da den yen vedereda pri vysokikh temperaturakh)

Metalicvedeniye i Termicheskaya Obrabutka Metallov PERTODICAL-

.959 Nr 3 pr -9 24 (USSR)

A.A. Zakharer (Ref 1) and Shall, Kars (Ref 2) have established that in pertain calculations of the stresses ABSTRACT

in tube: subjected to internal pressures by a neutral mel.um the sustained strength at elevated temperatures equals the sustained strength in ordinary tensile tests. Therefore it is possible to use the results of sustained

tensile tests for calculating the permissible stresses In a number of cases, the permissible stresses can be

mosen correctly only by taking into consideration the

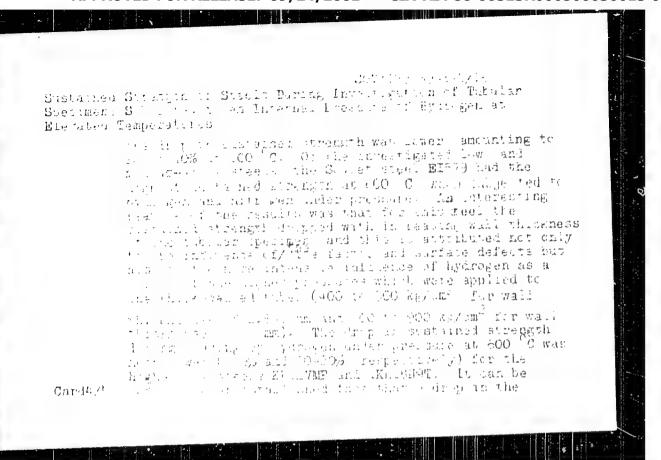
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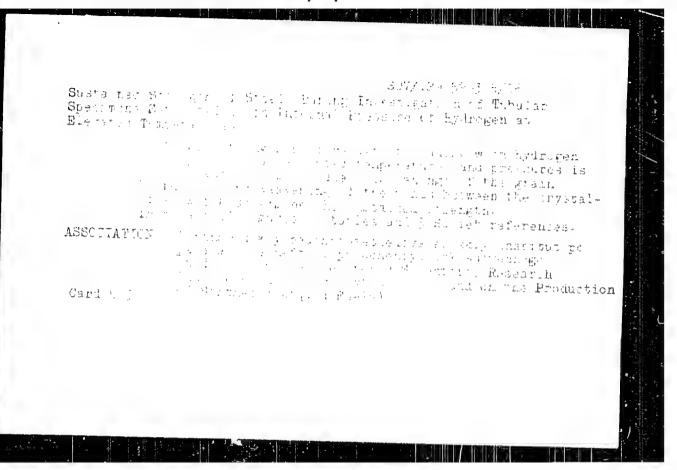
Sustained Strength of Steels During Investigation of Tubular Specimens Subjected to an Internal Pressure of Hydrogen at Elegated Temperatures

influence of the aggressive media which produce the internal pressures incide the tubes at the particular elevated temperatures Of such aggressive media, hydrogen is of considerable importance. The authors of this paper have produced a test rig and evolved a method of testing for sustained failure of tubular specimens which are subjected to internal pressure of various media at elevated temperatures. This test rig has been described in earlier work of some of the authors of this paper (Ref 3). In the here described work it was applied for studying the sustained strength of babular specimens of various steels subjected to internal pressure of hydrogen and nitrogen at elevated "emperatures. As a neutral medium, molecular nitrogen was thosen which enabled evaluating the influence of nyirogen on the sustained strength of the tubes. chemical compositions and the mechanical properties of the investigated (8) steels are entered in Tables 1 Card2/ and 2. In addition to these, steel containing 6% Cr

807/129-59-3-5/16 Sustained Strongth of Steels During Investigation of Tubular Specimens Subjected to an Internal Pressure of Hydrogen at Elerate: Temperatures

and supplementary additions of W. Y. Mo and No was stalled. Of the eight materials enumrated in Table 1, the latte on demmer hal aren were carried out as 450 Cani the respective results are graphed in Figure 1. A sharp drop in the sustained strength was coleried for tubular specimens subjected to internal pressure of hydrogen, brittle failure with a pronounced intertrystallite tharacter was observed, whilst in equal specimens subjected to internal pressure with nitcigen the failure was accompanied by appreciable plasta deformation and the failure was intracrystalline. The results for the other materials tested are also graphed. On the basis of the measured strength data for sustained loading for durations of 1 000 and 10 000 hours it can be concluded that hydrogen has a considerable influence on the reduction of the sustained strength, particularly in the case of commercial iron and steel 20; C these materials suffered a loss of 75 to 85% Card3/6 of their sustained strength. For low and medium alloy steels





CLIKMAN, L.A., doktor tekhn.nauk, prof.; KOLGATIN, R.N., inzh.; EEODOROVICH, V.F., kand.khimicheskikh nauk; DERYABINA, V.I., inzh.

Changes in the mechanical properties of certain steels under the effect of hydrogen at high temperatures and pressures.

Metallovedenic 3:58-73 159. (MEM 14:3)

(Steel-Hydrogen content)

(Metals at high temperature)

SOV/32-25-4-31/71 28(5) Glikman, L. A., Kostrov, Ye. N., Dobre., V. K. AUTHORS:

Tests for Corrosion Fatigue in Bending and Torsion (Ob ispytuni-TITLE:

yak' na kerrozionnuy, ustalost' pri izgibe i pri kruchenii)

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 4, pr 456-460 (USSR) PERIODICAL:

The tests were carried out in common with the metal laboratory ABSTRACT: of the "Elektrosila" Works. The problem of relationship between the fatigue kimits in tersion and bending under the simultaneous effect of corrosion has not been much investigated up to date,

and the results (Ref : 5,4) are centradictory. For this reason, special investigations of steel 35 (0.50% C, 0.32% Si, 0.77% Ma. 0.027% S and 0.022% P) were parried but in this case. The

and, les were made of a long bar (diameter 25 mm); they were admitted to remailiring at 850-870° and had the fyllowing Theracterister: $\sigma_s = 53.1 \text{ kg/mm}^2$, $\sigma_B = 62.1 \text{ kg/mm}^2$,

 $\delta_{\pm}=27.4\%$ and $\psi=60.4\%$. The sketch of a sample is given (Fig 1). The transverse fatigue tests were carried out on machines of the type NU at a sample rotation speed of 3000 rpm.

The sursion tests were made on an especially lesigned machine () ording to V. K. Donner, Engineer) with a pertain load Cara 1/1

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SOV/32-25-4-31/71

Tests for Corrosion Fatigue in Bending and Torsion

mement (Fig 2). The working principle of the machine consists in the fact that by an eccentrically loaded, rotating vertical axis a torsional moment varying in magnitude and direction is produced on the sample. The frequency of the load cycles is determined by the speed of the electric motor driving the vertical axis, and amounted to 2500-2500 cycles/minute. The corregion agent was a 3% NaCl solution, and parallel tects with air were made. V. V. Marugin (Tsentral nyy nauchno-issledovate) - skiy instifut poeskine flata) (Central Scientific Research Institute of the Merchant Marine and Ye. A. Suvorova (zavod "Elektro-fatigue curves obtained show that the corrosion-fatigue resistance greatly depends on the number of load cycles. The test results obtained show, among other things, that the relationship between the corrosion-fatigue resistance in bending and torsion remains the same for corrosion-resistant materials. There are 4 figures and 8 references, 6 of which are Soviet.

ASSOCIATION: Card 2/2 Tsentral nyy nauchno-issledovatel skiv institut merskere flota (Central Scientific Research Institute of the Merchant Marine)

poy/3h-25-7-59/09 78(J) Day, lenkey, N. N. Academician of the AS USCR, Vitaan, F. F. AUTHORD: Profusion, Docker of Physical and Mathematical Sciences, Blikmon, L. A. Professor, Dector of Egohnical Ediences, Fridmen, Ya. B. Prefearer, Doctor of Technical Sciences, Mirelyulty, I. N. Carl rate of Technical Sciences, Resoy, I. A. Jamier Scientific Schliberst r Yevgeniy Mikhaylovich Shevandin (Yevgeniy Kikhaylovich TITLE: Shavandir) PERIODICAL: Zavodskava laboratoriy., 1953, Val 25, Nr 7, p 896 (USSR) This is an obtaining written on the occasion of the death of the ABSTRACT: agrentist mentioned in the title. Showards are one of the leading scientists in the field of material mechanics; he became famous for his investigations of the nature of destruction by brittleness and the phenomena of destruction by brittleness of metals at low temperatures carried but at the Fiziko-tekhnicheshiy institut (Physical and Technical Institute). After 1945 the decembed dealt with the problems of cold-shortness of ferrous metals which are of great importance in ship-buildiam. Ye. M. Shevaniin published two Card 1/2 manuals on the mechanical properties of metals as well as

Yevgenty Kikhaylovich Shevandin

more than 50 original papers. His monograph "Tendency of Low-alloy Steels Towards Brittleness" was published in 1993.

Card 2/2

PHASE I BOOK EXPLOITATION

307/4501

Leningrad. Inzhenerno-ekonomicheskiy institut

Chietovaya obrabotka i sostoyaniye obrabotannoy poverkhnosti (Finishing Operations and Surface Roughness) [Leningrad] Izd-vo Leningrouniv-ta, 1960. 268 p. (Series: Its: Trudy, vyp. 30) 1,825 copies printed.

NA. (Title page): A.A. Matalin, Professor; Ed. (Inside book): G.M. Aron; Tech. Ed.: S.D. Vodolagina.

This collection of articles is intended for technical personnel in the machine-building industry and for students in schools of higher technical education.

**OVERAGE: The collection contains articles on the problems of developing methods:

methodical machining (such as grinding and superfinishing with strain hardening,
roll burnishing, fine grinding, etc.) which would serve to increase the life of
machine parts exposed to friction and wear, and thereby insure high productivity
and according. Methods for determining residual stresses (only in macrostresses)
and microstresses) are discussed in detail. Also considered are the possibility

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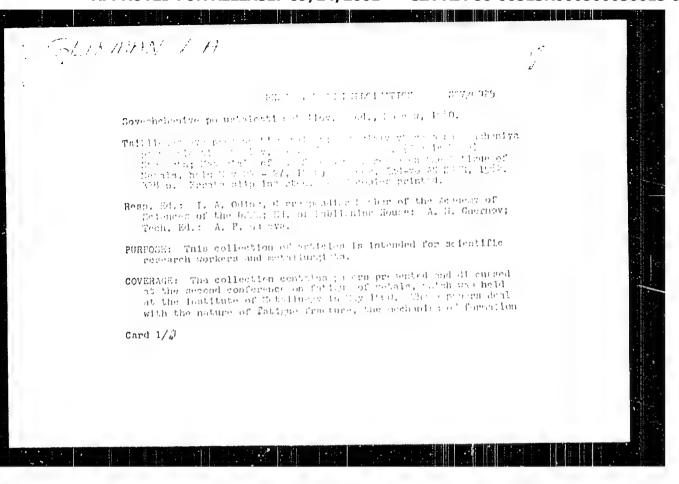
Finishing Operations and Surface Roughness SOV/4501 of using hydraulically actuated slide rests in lot production, the use of the group machining method, and an attachment for program control of an existing hathe which would not necessitate modernization of the lathe. A description of advanced production methods and work planning used in plants of the German Democratic Republic is presented. No personalities are mentioned. Reference: accompany most of the articles. TABLE OF CONTENTS: Foreword PART I. THE FINISH AND WEAF RESISTANCE OF MACHINE PARTS Matalin, A.A., Doctor of Technical Sciences, Professor, and V.S. Rystsova, Candidate of Technical Sciences. Increasing Wear Tesistance of KPT-1 Movie Projector Mechanism Parts by Polishing With Work-Hardening Regimes 5 By-tacva, V.S. Effect of Finishing on the Wear Resistance of Parts 17 Monstantinov, O. Ya. Engineer. Fine Dressing and Truing of the Abrasive Wheel in Jurface Grinding 32 Card 2/4

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CLIRMAN, L.A.; TEODORGVICH, V.P.; KOLGATIN, N.N.; DERYABINA, V.I.

Long-duration strength of some steels in the testing of tubular specimens under internal pressure of hydrogen at high temperatures. Khim.sera-i azotorg.soed.sod.v neft.i nefteprod. 3:439-450 (MIRA 14:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskiki protsessov. (Steel--Testing) (Hydrogen)

S/032/61/027/006/010/018

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8/07/2/61/0 31/24/3/23 Wethod of determining the flow... of the flow iffile, a consist of the equivalence of the the bulke quit compression is error to the contraction out even them, which results for the contest whose in plantic leferestion. The few limit of 0.7 at when offer in, at constant deformation to commune, b = Y = 0.25. Con but a cormition is attained with the me of a point with come and indentition was less when indenting a comical point in tremetal, its curvace i yer of the thickness to, limited by a circle of the radius r, is determed, which results in a transformation of the lisk to a conical function that the result of and the thickages to the equation $q + 1 - r/1 = 1 - \sin(a/2)$, ives, for q = 0.2/3, a vertex and $l = r = 172^3$. As a cone with such a vertex eagle lives indistings, parriy was urable indentations, an equivalent foursilet pyramic with a vertex angle of $17e^{0}$ was chosen, which, in the following, will be called a -gyrarid. It was experimentally found that is rething gramma the ratio $|c_{ij}\rangle_{ij}$ (σ_{ij} being the flow limit at plongston, and H the mean contact pressure of the truncated cone) is very near 0.33. When determining the flow limit by indentation of the α -pyramit, a load of P = 3000 kg is used, and the mean Card 2/ o

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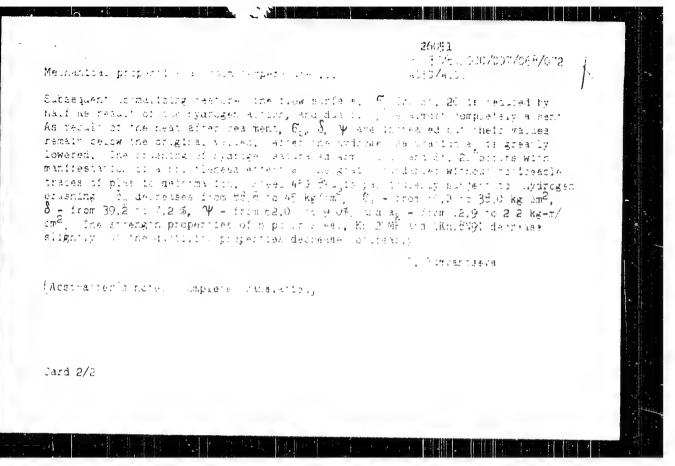
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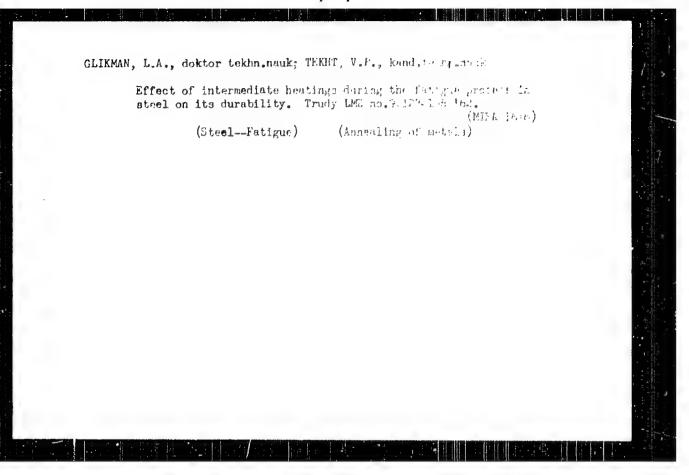
2005.

AUTHORS Suikman, I. A., Triduturio, Fron, Kongario, M. A., Isryanine, M. .

TITE Media Lai proper consider a experience of armostic and estate for a control of action of the serial estate for the solidation. Known a control of action of the solidation. Known a control of the solidation of the epiclistation. S. Sta. 960, 43.435.

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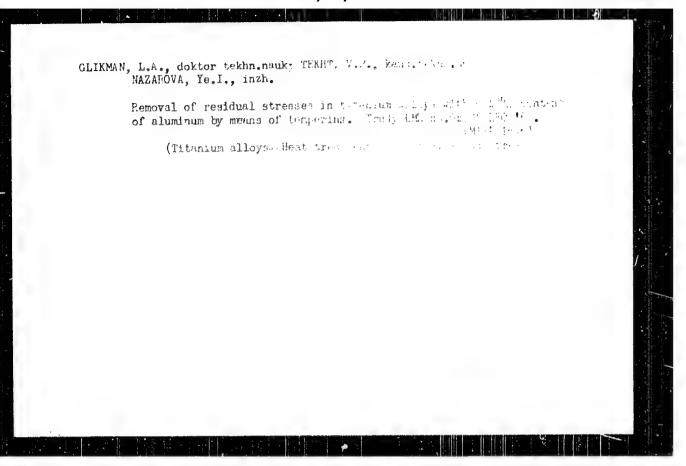


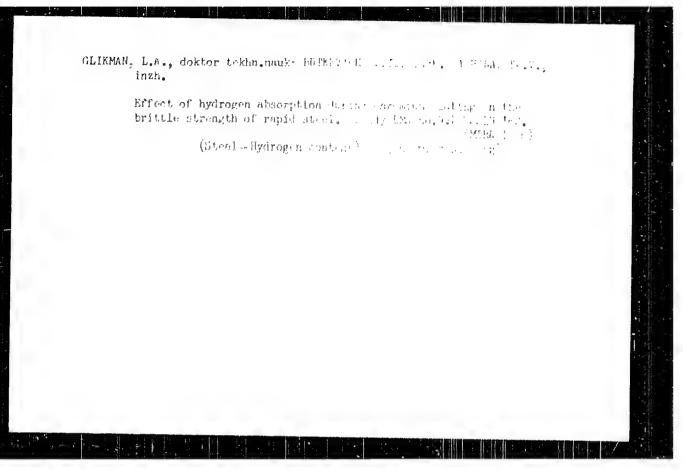


GLIKMAN, L.A., doktor tekhn.nauk; BABAYEV, A.N., kand.tekhn.nauk;
KOSTROV, Ye.N., kand.tekhn.nauk; DAMASKINA, O.L., inzh.

Fatigue strength and residual strenges in steel specimens
surfaced with 1Khl3 high-chromium stainless steel. Trudy LMZ
no.9:138-151 '62. (HIRA 16:6)

(Steel-Fatigue) (Thermal stresses)





8/137/62/000/011/034/045 A006/A101

AUTHORS:

Glikman, L. A., Kostrov, Ye. H.

TITLE:

The effect of the scale factor upon the corresion-faligue strength

of metals

PERIODICAL: Referativnyy zhurnal, Metallurgiya, no. 11, 1962, 113 - 114, ab-

stract 111741 (In collection: "Tsiklich, prochnost' metaliev",

Moscow, AN SSSR, 1962, 187-196)

The authors studied the effect of the scale factor upon the corresion-fatigue resistance in sea water of the following materials: structural carbon steel CT 40 (St 40) in annealed state, structural Cr-M-steel 40 AH (40KhN), stainless austenitic steel 1 X18H9 T (1Kn18N9T) in rolled state, brass JEHUK 55-3-1 (LMtsZh55-3-1) and JAMUK 67-5-2-2 (LAMtsZh67-5-2-2) In dast state. Results are presented on variations of the corrosion-fatigue strength of all materials under atmospheric conditions, in 3% NaCl (imitating sea water) and fresh water, depending upon the frequency of cycles, the shape and dimension of specimens. The process of corrosion-fatigue failure is determined by the interaction

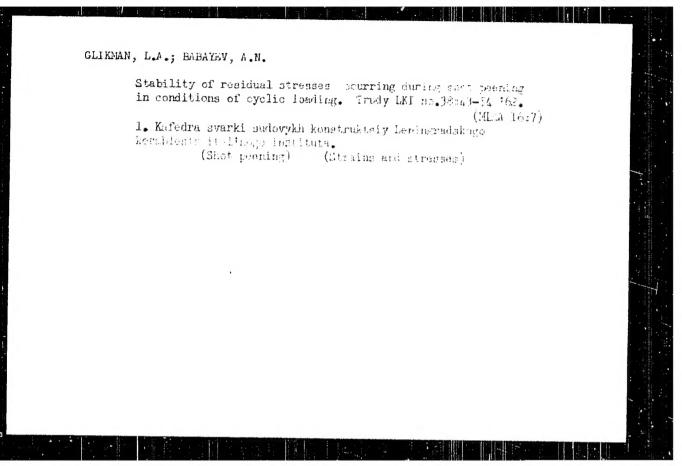
Card 1/9

The effect of the scale factor upon the...

of ? factors: namely, the corrosion and the scenanical factor. Pres the relative share of these factors, under otherwise equal conditions (material, frequency of cycles, shape and dimension of specimens, corrosion medium), depends upon the basis of the cyclic effect. There are 16 references.

N. Lukashina

[Abstracter's note: Complete translation]



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AUTHORS:

Gilkman, L. A., Kostrov, Ye. N.

TITLE:

Effect of size factor on corrosion-fatigue strength of metals

PERIODICAL: Referativnyy zhurnal, otdel'nyy vypusk, 48. Mashinostroitel'nyye materialy, konstruktsii i raschet detaley mashin, no. 1, 1963, 4, abstract 1.48.20 (In collection: "Tsiklich. prochnost' metallov",

M., AN SSSR, 1962, 187 - 198)

The effect of the size factor on corrosion-fatigue strength of carbon steel, 40 XH (40KhN) Cr-Ni structural steel, 1 X 18 H 9 T (1Kh18N9T) stainless austenitic steel, JMLDK55-3-1 (LMtsZh55-3-1) and JAMUX 67-5-2-2 (LAMtsZh67-5-2-2) brass was studied in 3% NaCl solution simulating sea water on an HU (IM's) machine at rotational bending. It is pointed out that under atmospheric conditions all materials studied showed the usual effect of the size factor reflecting in the reduction of fatigue strength with the increase of the diameter of samples from 9 - 10 to 60 - 70 mm. For structural steels 40 and 40Kh with the increase of the diameter of samples from 9 to 55 - 60 mm at a low-

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Effect of size factor on ...

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base cyclic stress in 3% NaCl solution the usual effect of the size factor is also observed. Beginning with a certain base of cyclic stress and at its further increase a positive effect of the size factor is observed, viz. the corrosion-fatigue strength of large samples is higher than that of small ones. With the increase of the diameter of samples from 10 to 60 mm the effect of the size factor on fatigue strength of IKn13NA stainless steel at a simultaneous corrosion in 35 NaCl solution proved to be qualitatively the same as under atmospheric conditions. With the increase of the cyclic stress base the negative effect of the size factor on corrosion-fatigue strength of this steel intensifies due to the crevice corrosion effect mainly in large samples. Fatigue tests in 3% NaCl solution of east brass grades LMtsZh and LAMtsZh show that the effect of the size factor under these conditions is considerably lower than in the air. The results obtained in this study confirm the supported conceptions that the process of corrosion-fatigue breakdown is determined by the interaction of corrosion and mechanical factors. Thereby the relative part played by these factors, other conditions being equal (material, cycle frequency, shape and dimensions of samples, corrosion medium) depend on the cyclic stress base. There are 16 references.

[Abstracter's note: Complete translation]

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